

Questions for Industry

- 1) What should be the appropriate breadth and depth of FAA regulations?
 - System level, subsystem level, component level?
 - Ground, flight, and recovery operations?
 - Maintenance?
 - Training?
 - Mission planning?
 - Manufacturing?
 - Testing?
 - Quality control?
 - Human factors?
- 2) What should be the appropriate mix of performance-based, process-based, and prescriptive requirements?
- 3) What is an appropriate level of safety the FAA should target with its regulations?
 - a. Should the FAA use a variable safety level depending on type and purpose of mission?
 - Science
 - Research
 - Tourism
 - b. Should the FAA treat crew differently than space flight participants?
- 4) What, if any, should be the medical and training requirements for space flight participants?
- 5) How best should the FAA incorporate government and industry standards into the licensing process?
 - How should FAA make use of advisory circulars and other guidance documents?
- 6) How much flight testing should the FAA require before a vehicle can carry crew, or carry space flight participants?
 - What level of verification should be required for vehicle and abort system tests?
- 7) How much control over a spacecraft should ground personnel and flight crew have?
 - Are any constraints on autonomous operations appropriate?
- 8) Should pressure suits be required for launch and entry?
 - For crew?
 - For space flight participants?
- 9) How detailed or prescriptive should FAA's environmental control and life support system requirements be?
 - Example - Current requirements for crew (14 CFR § 460.11):

- a) An operator must provide atmospheric conditions adequate to sustain life and consciousness for all inhabited areas within a vehicle. The operator or flight crew must monitor and control the following atmospheric conditions in the inhabited areas or demonstrate through the license or permit process that an alternate means provides an equivalent level of safety—
 - 1. Composition of the atmosphere, which includes oxygen and carbon dioxide, and any revitalization;
 - 2. Pressure, temperature and humidity;
 - 3. Contaminants that include particulates and any harmful or hazardous concentrations of gases, or vapors; and
 - 4. Ventilation and circulation.
- b) An operator must provide an adequate redundant or secondary oxygen supply for the flight crew.
- c) An operator must
 - 1. Provide a redundant means of preventing cabin depressurization; or
 - 2. Prevent incapacitation of any of the flight crew in the event of loss of cabin pressure.

10) What should the FAA require for failure tolerance?

11) What methodology should the FAA follow in determining a minimum factor of safety for structures?

12) What should the FAA require regarding an effective crew escape capability?

- How capable should a crew escape system be?
- What portion of the mission profile should it protect?
- What alternatives to a crew escape capability would achieve an equivalent level of safety?

Other Questions if Time Permits:

13) At what point in a spacecraft's development cycle should the FAA be engaged?

14) Should there be a minimum age limit for space flight participants?

15) What should the FAA require for crew rest?

16) What should be the responsibility of the crew to oversee the safety of space flight participants?

17) What level of verification should be required for safety critical systems?

18) Should the FAA require provisions for emergency such as fire suppression and personal protective equipment?

- Should secondary oxygen be provided for space flight participants?